In the claims:

Claims 1-8 (canceled)

Claim 9 (previously presented) The unit of claim 21 wherein the molecular interaction bias is electrical.

Claim 10 (currently amended) A sample delivery and sensing unit for directed molecular interaction during surface plasmon resonance analysis comprising:

an electrically conductive surface plasmon resonance layer;

an integrally formed surface plasmon resonance sensor in optic communication with the surface plasmon resonance layer, said sensor ~~and~~ having a housing transparent to a given frequency of light, and, within said housing, a source of the given frequency of light directed onto said surface plasmon resonance layer and a photodetector array for receiving said given frequency of light reflected from said plasmon resonance detector; and

a flow cell attached to the surface plasmon resonance layer, having a fluid path, said fluid path having an analyte detection chamber disposed along the fluid path, said analyte detection chamber having an interior region in fluidic communication with the surface plasmon resonance layer and having means for generation of a molecular interaction bias across the analyte detection chamber;

~~The unit of claim 21~~ wherein the molecular interaction bias is magnetic.

11. (currently amended) A sample delivery and sensing unit for directed molecular interaction during surface plasmon resonance analysis comprising:

an integrally formed surface plasmon resonance sensor having a housing transparent to electromagnetic radiation of a given frequency range and, within said housing, a source of electromagnetic radiation having the given frequency range and a photodetector array disposed adjacent the surface of the housing, such that radiation from the source reflects off the surface and strikes the photodetector array;

a thin surface plasmon resonance layer in optic communication with an exterior surface of the integrally formed surface plasmon resonance sensor; and

a fluid path having an analyte detection chamber in fluidic communication with the surface plasmon resonance layer having means for generating a molecular interaction bias across the analyte detection chamber to direct bias responsive conjugated molecules to the surface plasmon resonance layer.

Claim 12 (previously presented) The unit of claim 11 wherein the molecular interaction bias is electrical.

Claim 13 (currently amended) A sample delivery and sensing unit for directed molecular interaction during surface plasmon resonance analysis comprising:

an integrally formed surface plasmon resonance sensor having a housing transparent to electromagnetic radiation of a given frequency range and, within said housing, a source of electromagnetic radiation having the given frequency range and, a photodetector array disposed adjacent the surface of the housing, such that radiation from the source reflects off the surface and strikes the photodetector array;

a thin surface plasmon resonance layer in optic communication with an exterior surface of the integrally formed surface plasmon resonance sensor; and

an analyte detection chamber in fluidic communication with the surface plasmon resonance layer having means for generating a molecular interaction bias across the analyte detection chamber to direct bias responsive conjugated molecules to the surface plasmon resonance layer;

~~The unit of claim 11~~ wherein the molecular interaction bias is magnetic.

Claim 14 (currently amended) A method for kinetically controlled surface plasmon resonance analysis comprising:

providing a surface plasmon resonance sensor having a surface plasmon layer in optical communication with the sensor;

derivatizing the surface plasmon layer;

providing a fluid path having an analyte detection chamber in fluidic communication with the derivatized surface plasmon layer;

providing means in the chamber for generating a molecular interaction bias across the chamber;

providing a conjugate between an analyte and a bias responsive moiety, wherein the analyte is reactive with the derivatized surface plasmon layer and the bias responsive moiety changes the response of the analyte to the molecular interaction bias;

introducing the conjugated analyte into the chamber;

generating the molecular interaction bias within the chamber; and

determining changes in surface plasmon resonance due to association of the conjugated analyte to the derivatized surface plasmon layer.

Claim 15 (previously presented) The method of claim 14 wherein the molecular interaction bias is electrical.

Claim 16 (currently amended) A method for kinetically controlled surface plasmon resonance analysis comprising:

providing a surface plasmon resonance sensor having a surface plasmon layer in optical communication with the sensor;

derivatizing the surface plasmon layer;

placing an analyte detection chamber in fluidic communication with the derivatized surface plasmon layer;

providing means in the chamber for generating a molecular interaction bias across the chamber;

providing a conjugate between an analyte and a bias responsive moiety, wherein the analyte is reactive with the derivatized surface plasmon layer and the bias responsive moiety changes the response of the analyte to the molecular interaction bias;

introducing the conjugated analyte into the chamber;

generating the molecular interaction bias within the chamber; and

determining changes in surface plasmon resonance due to association of the conjugated analyte to the derivatized surface plasmon layer;

~~The method of claim 14~~ wherein the molecular interaction bias is magnetic.

Claims 17-18 (canceled)

Claim 19. (previously presented) The method of claim 14 wherein the conjugated analyte is for the kinetically enhanced measurement of molecular interactions in the groups consisting of: avidin-biotin binding, antibody-antigen binding, antibody-antigen dissociation kinetics, protein binding, protein-nucleic acid binding, specific detection of small molecules, concentration of analytes, measurement of oligonucleotide complements, mixture proportions, receptor-ligand interactions, aptamer interactions, and molecular assembly events.

Claim 20 (previously presented) The method of claim 19 wherein the conjugated analyte is for the kinetically enhanced measurement of molecular interactions in competitive binding assays.

Claim 21 (previously presented) A sample delivery and sensing unit for directed molecular interaction during surface plasmon resonance analysis comprising:

an electrically conductive surface plasmon resonance layer;

an integrally formed surface plasmon resonance sensor in optic communication with the surface plasmon resonance layer, said sensor ~~and~~ having a housing transparent to a given frequency of light, and, within said housing, a source of the given frequency of light directed onto said surface plasmon resonance layer and a photodetector array for receiving said given frequency of light reflected from said plasmon resonance detector; and

a flow cell attached to the surface plasmon resonance layer, having a fluid path, said fluid path having an analyte detection chamber disposed along the fluid path, said analyte detection chamber having an interior region in fluidic communication with the surface plasmon resonance layer and having means for generation of a molecular interaction bias across the analyte detection chamber.

Claim 22 (previously presented) The unit of claim 21 wherein said means for generation of a molecular interaction bias across the analyte detection chamber comprises a first electrode coupled to said surface plasmon resonance layer and a second electrode disposed at a surface of said analyte detection chamber opposed to said first electrode.

Claim 23 (currently amended) The unit of claim 22 wherein said second electrode forms a part of <u>the fluid</u> path of said analyte detection chamber.